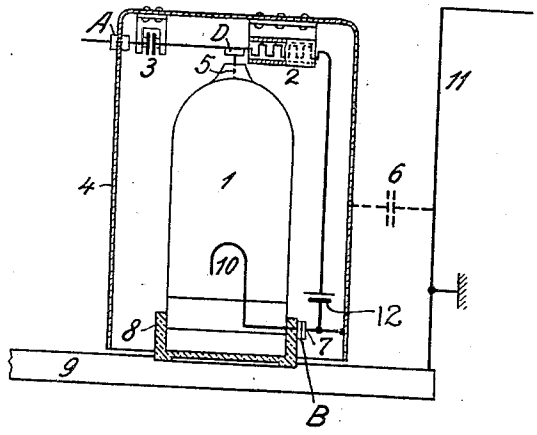
July 16, 1940.

H. JOHANNSON

2,208,370

SCREENING HIGH FREQUENCY DEVICES

Filed Aug. 27, 1937



Inventor:
Helmut Johannson
by R. C. Hapgood
Attorney

Patented July 16, 1940

2,208,370

UNITED STATES PATENT OFFICE

2,208,370

SCREENING HIGH FREQUENCY DEVICES

Helmut Johannson, Berlin-Charlottenburg, Germany, assignor to C. Lorenz Aktiengesellschaft, Berlin-Tempelhof, Lorenzweg, Germany, a company

Application August 27, 1937, Serial No. 161,293
In Germany August 27, 1936

1 Claim. (Cl. 250—16)

In the construction of high frequency apparatus it is well known to screen certain elements thereof, such as coils, electron tubes and the like, by a metallic casing to which earth potential is applied. In circuit arrangements of this kind the earth potential is in general equal to the cathode potential, the screenings thus having both earth and cathode potentials.

In certain cases however the cathode potential is not equal to the earth potential, there being disturbing alternating potentials which can readily enter the working-current circuits, especially at certain parts of the circuit arrangement, and in such case are able to disturb the entire arrangement. The parts in a circuit arrangement which are particularly easy to disturb in this way are the grid leak resistance and the coupling condenser of electron tube stages.

In order to avoid such disturbances it is proposed by the invention to arrange the coupling condenser and the grid leak resistance together with the electron tube to be screened in a shield common to them and to connect this shield to the cathode. In this way disturbing alternating potentials are prevented from being transmitted by the space capacity to this condenser and resistance.

One embodiment of the invention is described hereafter, reference being had to the accompanying drawing which is a diagrammatic sectional view showing this embodiment by way of example.

The electron tube 1, grid leak resistance 2, grid battery 12, and coupling condenser 3 are contained in a screening shield 4. Resistance 2 and condenser 3 are fixedly mounted therein and are adapted by a contact D to join the grid voltage supply lead 5. Shield 4 is given cathode potential through a conductor 7, 10 denoting the cathode, and has, as illustrated in dotted lines, the space capacity 6 with respect to the grounded part of the equipment, indicated in a purely diagrammatic manner at 11. It will be seen that disturbing potentials cannot be transferred by the space capacity 6 because shield 4 renders it impossible for them to cause a drop of potential across resistance 2. Tube 1 is seated in a socket 8 fixed on a base plate 9. By removing the shield 4 the supply leads connected to parts 2, 3 are interrupted at contacts A and B.

The novel arrangement insures an efficient screening especially in the case of tube stages in high frequency apparatus where it is not possible to apply earth potential to the cathodes.

What is claimed is:

A high frequency arrangement having grounded parts and a base plate, an electron tube supported from said base plate and having a cathode electrically separate from said grounded parts, and a grid electrically separate from said cathode; a grid contact supported from said tube and connected to said grid; a cathode contact connected to said cathode; a removable pot-shaped shield shaped and normally positioned to closely surround said tube; a coupling condenser and a grid leak resistance disposed within said shield and fixed thereto; a first contacting means connected to said condenser and resistance and positioned to engage said grid contact to make connection therewith when said shield is placed in normal position; and a second contacting means connected to said shield and positioned to engage said cathode contact when said shield is placed in normal position.

HELMUT JOHANNSON.